



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header

List View

General Information Contact Default Values Discount Document Information

Procurement Folder: 209741

SO Doc Code: CRFQ

Procurement Type: Central Purchase Order

SO Dept: 0702

Vendor ID: 00000219154

SO Doc ID: TAX1600000006

Legal Name: SOFTWARE INFORMATION SYSTEMS LLC

Published Date: 5/23/16

Alias/DBA:

Close Date: 6/2/16

Total Bid: \$325,000.00

Close Time: 13:30

Response Date: 06/02/2016

Status: Closed

Response Time: 13:24

Solicitation Description: Addendum No. 01 - Backup Hardware Software System

Total of Header Attachments: 0

Total of All Attachments: 0



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

**State of West Virginia
 Solicitation Response**

Proc Folder : 209741

Solicitation Description : Addendum No. 01 - Backup Hardware Software System

Proc Type : Central Purchase Order

Date issued	Solicitation Closes	Solicitation No	Version
	2016-06-02 13:30:00	SR 0702 ESR06021600000005858	1

VENDOR

000000219154
 SOFTWARE INFORMATION SYSTEMS LLC

FOR INFORMATION CONTACT THE BUYER

Michelle L Childers
 (304) 558-2063
 michelle.l.childers@wv.gov

Signature X FEIN # DATE

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Cost of System	1.00000	LS	\$325,000.000000	\$325,000.00

Comm Code	Manufacturer	Specification	Model #
71151106			

Extended Description : Total Cost of New Backup Hardware System



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Request for Quotation
 21 - Info Technology

Proc Folder: 209741

Doc Description: Addendum No. 01 - Backup Hardware Software System

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2016-05-23	2016-06-02 13:30:00	CRFQ 0702 TAX1600000006	2

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:

Software Information System, LLC
 200 Association Drive, Suite 210
 Charleston, WV 25311

304 768-1645

FOR INFORMATION CONTACT THE BUYER

Michelle L Childers
 (304) 558-2063
 michelle.l.childers@wv.gov

Signature X

FEIN #

61-1371685

DATE

6-2-2016

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMAITON:

Addendum

Addendum No. 01 issued to publish and distribute the attached information to the vendor community.

The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia State Tax Division to establish a contract for the one time purchase of a backup hardware and software system for the Agency. The backup system will be installed by the Agency in three (3) locations, which will be the Revenue Center in Charleston, WV, the Office of Technology, Data Center in Charleston, WV and at an offsite location in Clarksburg, WV. Installation of backup system is not part of this solicitation.

INVOICE TO		SHIP TO	
OPERATIONS DIVISION TAX DIVISION OF PO BOX 11748		INFORMATION TECHNOLOGY DIVISION TAX DIVISION OF 1001 LEE STREET	
CHARLESTON	WV25339-1748	CHARLESTON	WV 25301
US		US	

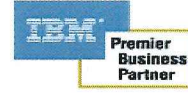
Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Cost of System	1.00000	LS		\$ 325 000

Comm Code	Manufacturer	Specification	Model #
71151106			

Extended Description :

Total Cost of New Backup Hardware System

Exhibit "A" Pricing Sheet WV State Tax Division Backup System



CRFQ 0702 TAX160000006 due 6-2-2016

6/2/2016

Hardware with 3 Years 7x24x4 Support

IBM V5000				Unit List	Ext List
Line No.	Qty	Part Number	Description		
1	1	2078-224	V5020 SFF CONTROL	\$12,000.00	\$12,000.00
2	2	2078-224-5305	5M FIBER CABLE (LC)	\$129.00	\$258.00
3	1	2078-224-9730	POWER CORD - PDU CONNECTION	\$29.00	\$29.00
4	1	2078-224-AC0B	16GB FC ADAPTER PAIR	\$4,800.00	\$4,800.00
5	12	2078-224-AC57	300GB 15K 2.5 INCH HDD	\$1,309.00	\$15,708.00
6	5	2078-224-AC9C	400GB 2.5 INCH FLASH DRIVE	\$5,287.00	\$26,435.00
7	1	2078-224-ACE4	ENCRYPTION ENABLEMENT	\$5,000.00	\$5,000.00
8	1	2078-224-ACEC	ENCRYPTION USB DRIVE PACK	\$417.00	\$417.00
9	1	2078-224-AGCC	SHIPPING AND HANDLING 224	\$249.00	\$249.00
10	1	5639-SV2	IBM SPECTRUM VIRTUALIZE SOFTWARE FOR STO	\$0.00	\$0.00
11	1	5639-SV2-0005	BASE PER STORAGE DEVICE WITH 1 YEAR SW M	\$4,600.00	\$4,600.00
12	1	5639-SVL	SPECTRUM VIRTUALIZE SOFTWARE FOR STORWIZ	\$0.00	\$0.00
13	1	5639-SVL-0005	BASE PER STORAGE DEVICE SW MAINT 3 YEAR	\$1,840.00	\$1,840.00
14	1	2078-12F	V5000 LFF EXPANSION	\$4,000.00	\$4,000.00
15	1	2078-12F-9730	POWER CORD - PDU CONNECTION	\$29.00	\$29.00
16	12	2078-12F-AC39	4TB 7.2K 3.5 INCH NL HDD	\$1,869.00	\$22,428.00
17	2	2078-12F-ACUA	0.6M 12GB SAS CABLE(MSAS HD)	\$119.00	\$238.00
18	1	2078-12F-AGCF	SHIPPING AND HANDLING12F	\$249.00	\$249.00
19	1	5639-SSL	SPECTRUM VIRTUALIZE SOFTWARE FOR STORWIZ	\$0.00	\$0.00
20	1	5639-SSL-0001	BASE PER STORAGE DEVICE SW MAINT 3 YEAR	\$1,600.00	\$1,600.00
21	1	5639-SV4	IBM SPECTRUM VIRTUALIZE SOFTWARE FOR STO	\$0.00	\$0.00
22	1	5639-SV4-0001	BASE PER STORAGE DEVICE WITH 1 YEAR SW M	\$4,000.00	\$4,000.00
23	1	2078-12F	V5000 LFF EXPANSION	\$4,000.00	\$4,000.00
24	1	2078-12F-9730	POWER CORD - PDU CONNECTION	\$29.00	\$29.00
25	12	2078-12F-AC39	4TB 7.2K 3.5 INCH NL HDD	\$1,869.00	\$22,428.00
26	2	2078-12F-ACUA	0.6M 12GB SAS CABLE(MSAS HD)	\$119.00	\$238.00
27	1	2078-12F-AGCF	SHIPPING AND HANDLING12F	\$249.00	\$249.00
28	1	5639-SSL	SPECTRUM VIRTUALIZE SOFTWARE FOR STORWIZ	\$0.00	\$0.00
29	1	5639-SSL-0001	BASE PER STORAGE DEVICE SW MAINT 3 YEAR	\$1,600.00	\$1,600.00
30	1	5639-SV4	IBM SPECTRUM VIRTUALIZE SOFTWARE FOR STO	\$0.00	\$0.00
31	1	5639-SV4-0001	BASE PER STORAGE DEVICE WITH 1 YEAR SW M	\$4,000.00	\$4,000.00
32	1	2078-12F	V5000 LFF EXPANSION	\$4,000.00	\$4,000.00
33	1	2078-12F-9730	POWER CORD - PDU CONNECTION	\$29.00	\$29.00
34	12	2078-12F-AC39	4TB 7.2K 3.5 INCH NL HDD	\$1,869.00	\$22,428.00
35	2	2078-12F-ACUA	0.6M 12GB SAS CABLE(MSAS HD)	\$119.00	\$238.00
36	1	2078-12F-AGCF	SHIPPING AND HANDLING12F	\$249.00	\$249.00
37	1	5639-SSL	SPECTRUM VIRTUALIZE SOFTWARE FOR STORWIZ	\$0.00	\$0.00
38	1	5639-SSL-0001	BASE PER STORAGE DEVICE SW MAINT 3 YEAR	\$1,600.00	\$1,600.00
39	1	5639-SV4	IBM SPECTRUM VIRTUALIZE SOFTWARE FOR STO	\$0.00	\$0.00
40	1	5639-SV4-0001	BASE PER STORAGE DEVICE WITH 1 YEAR SW M	\$4,000.00	\$4,000.00
Subtotal				\$168,968.00	

IBM V5000				Unit List	Ext List
Line No.	Qty	Part Number	Description		
41	1	2078-224	V5020 SFF CONTROL	\$12,000.00	\$12,000.00
42	2	2078-224-5305	5M FIBER CABLE (LC)	\$129.00	\$258.00
43	1	2078-224-9730	POWER CORD - PDU CONNECTION	\$29.00	\$29.00
44	1	2078-224-AC0B	16GB FC ADAPTER PAIR	\$4,800.00	\$4,800.00
45	12	2078-224-AC57	300GB 15K 2.5 INCH HDD	\$1,309.00	\$15,708.00
46	5	2078-224-AC9C	400GB 2.5 INCH FLASH DRIVE	\$5,287.00	\$26,435.00
47	1	2078-224-ACE4	ENCRYPTION ENABLEMENT	\$5,000.00	\$5,000.00
48	1	2078-224-ACEC	ENCRYPTION USB DRIVE PACK	\$417.00	\$417.00
49	1	2078-224-AGCC	SHIPPING AND HANDLING 224	\$249.00	\$249.00
50	1	5639-SV2	IBM SPECTRUM VIRTUALIZE SOFTWARE FOR STO	\$0.00	\$0.00

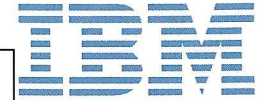
51	1	5639-SV2-0005	BASE PER STORAGE DEVICE WITH 1 YEAR SW M	\$4,600.00	\$4,600.00
52	1	5639-SVL	SPECTRUM VIRTUALIZE SOFTWARE FOR STORWIZ	\$0.00	\$0.00
53	1	5639-SVL-0005	BASE PER STORAGE DEVICE SW MAINT 3 YEAR	\$1,840.00	\$1,840.00
54	1	2078-12F	V5000 LFF EXPANSION	\$4,000.00	\$4,000.00
55	1	2078-12F-9730	POWER CORD - PDU CONNECTION	\$29.00	\$29.00
56	12	2078-12F-AC39	4TB 7.2K 3.5 INCH NL HDD	\$1,869.00	\$22,428.00
57	2	2078-12F-ACUA	0.6M 12GB SAS CABLE(MSAS HD)	\$119.00	\$238.00
58	1	2078-12F-AGCF	SHIPPING AND HANDLING12F	\$249.00	\$249.00
59	1	5639-SSL	SPECTRUM VIRTUALIZE SOFTWARE FOR STORWIZ	\$0.00	\$0.00
60	1	5639-SSL-0001	BASE PER STORAGE DEVICE SW MAINT 3 YEAR	\$1,600.00	\$1,600.00
61	1	5639-SV4	IBM SPECTRUM VIRTUALIZE SOFTWARE FOR STO	\$0.00	\$0.00
62	1	5639-SV4-0001	BASE PER STORAGE DEVICE WITH 1 YEAR SW M	\$4,000.00	\$4,000.00
63	1	2078-12F	V5000 LFF EXPANSION	\$4,000.00	\$4,000.00
64	1	2078-12F-9730	POWER CORD - PDU CONNECTION	\$29.00	\$29.00
65	12	2078-12F-AC39	4TB 7.2K 3.5 INCH NL HDD	\$1,869.00	\$22,428.00
66	2	2078-12F-ACUA	0.6M 12GB SAS CABLE(MSAS HD)	\$119.00	\$238.00
67	1	2078-12F-AGCF	SHIPPING AND HANDLING12F	\$249.00	\$249.00
68	1	5639-SSL	SPECTRUM VIRTUALIZE SOFTWARE FOR STORWIZ	\$0.00	\$0.00
69	1	5639-SSL-0001	BASE PER STORAGE DEVICE SW MAINT 3 YEAR	\$1,600.00	\$1,600.00
70	1	5639-SV4	IBM SPECTRUM VIRTUALIZE SOFTWARE FOR STO	\$0.00	\$0.00
71	1	5639-SV4-0001	BASE PER STORAGE DEVICE WITH 1 YEAR SW M	\$4,000.00	\$4,000.00
Subtotal					\$136,424.00

IBM V5000

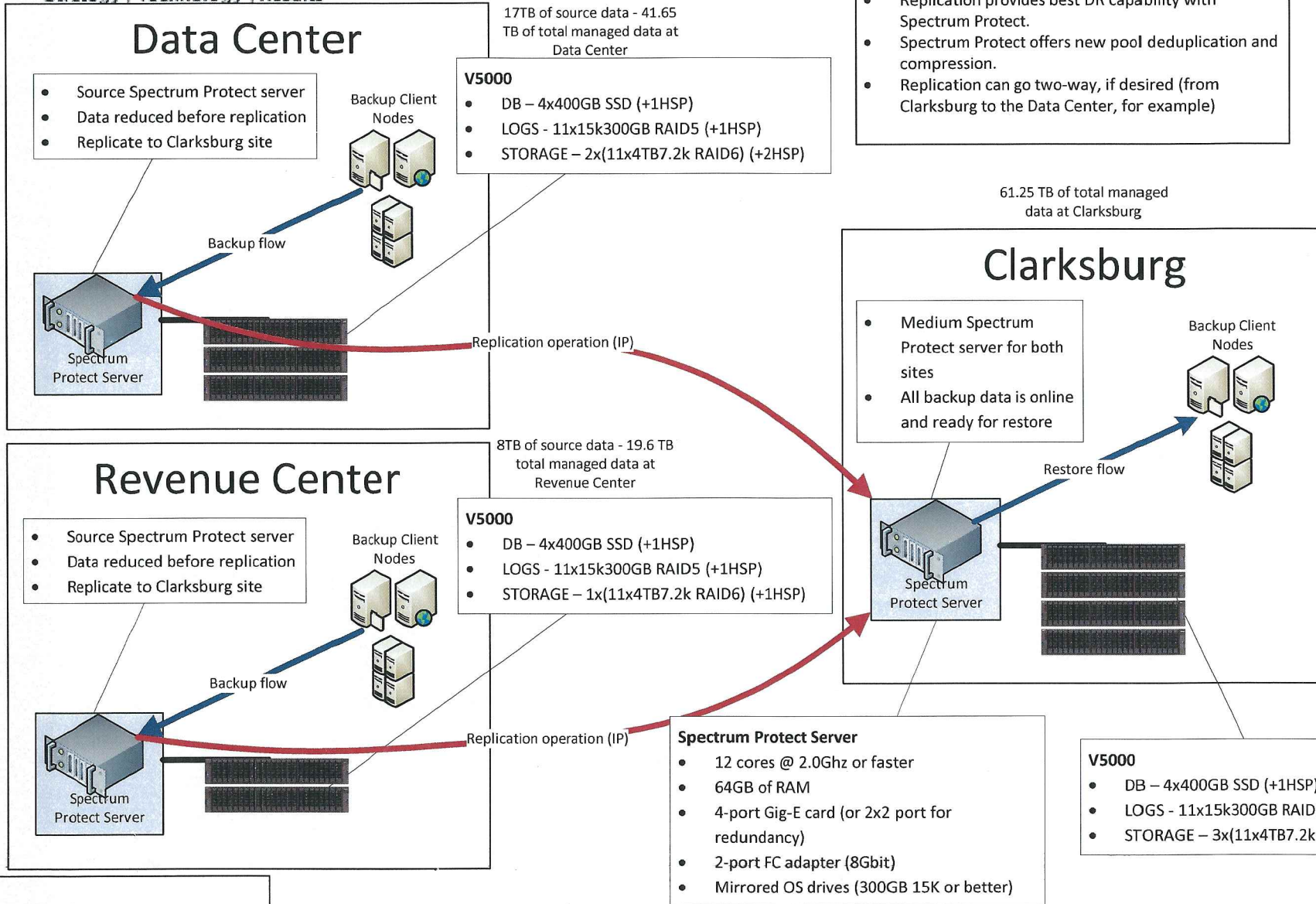
<u>Line No.</u>	<u>Qty</u>	<u>Part Number</u>	<u>Description</u>	<u>Unit List</u>	<u>Ext List</u>
72	1	2078-224	V5020 SFF CONTROL	\$12,000.00	\$12,000.00
73	2	2078-224-5305	5M FIBER CABLE (LC)	\$129.00	\$258.00
74	1	2078-224-9730	POWER CORD - PDU CONNECTION	\$29.00	\$29.00
75	1	2078-224-AC0B	16GB FC ADAPTER PAIR	\$4,800.00	\$4,800.00
76	12	2078-224-AC57	300GB 15K 2.5 INCH HDD	\$1,309.00	\$15,708.00
77	5	2078-224-AC9C	400GB 2.5 INCH FLASH DRIVE	\$5,287.00	\$26,435.00
78	1	2078-224-ACE4	ENCRYPTION ENABLEMENT	\$5,000.00	\$5,000.00
79	1	2078-224-ACEC	ENCRYPTION USB DRIVE PACK	\$417.00	\$417.00
80	1	2078-224-AGCC	SHIPPING AND HANDLING 224	\$249.00	\$249.00
81	1	5639-SV2	IBM SPECTRUM VIRTUALIZE SOFTWARE FOR STO	\$0.00	\$0.00
82	1	5639-SV2-0005	BASE PER STORAGE DEVICE WITH 1 YEAR SW M	\$4,600.00	\$4,600.00
83	1	5639-SVL	SPECTRUM VIRTUALIZE SOFTWARE FOR STORWIZ	\$0.00	\$0.00
84	1	5639-SVL-0005	BASE PER STORAGE DEVICE SW MAINT 3 YEAR	\$1,840.00	\$1,840.00
85	1	2078-12F	V5000 LFF EXPANSION	\$4,000.00	\$4,000.00
86	1	2078-12F-9730	POWER CORD - PDU CONNECTION	\$29.00	\$29.00
87	12	2078-12F-AC39	4TB 7.2K 3.5 INCH NL HDD	\$1,869.00	\$22,428.00
88	2	2078-12F-ACUA	0.6M 12GB SAS CABLE(MSAS HD)	\$119.00	\$238.00
89	1	2078-12F-AGCF	SHIPPING AND HANDLING12F	\$249.00	\$249.00
90	1	5639-SSL	SPECTRUM VIRTUALIZE SOFTWARE FOR STORWIZ	\$0.00	\$0.00
91	1	5639-SSL-0001	BASE PER STORAGE DEVICE SW MAINT 3 YEAR	\$1,600.00	\$1,600.00
92	1	5639-SV4	IBM SPECTRUM VIRTUALIZE SOFTWARE FOR STO	\$0.00	\$0.00
93	1	5639-SV4-0001	BASE PER STORAGE DEVICE WITH 1 YEAR SW M	\$4,000.00	\$4,000.00
Subtotal					\$103,880.00

Lenovo Servers

<u>Line No.</u>	<u>Qty</u>	<u>Part Number</u>	<u>Description</u>	<u>Unit List</u>	<u>Ext List</u>
94	3	8869KLU	TOPSELLER X3550 M5, XEON 12C E5-2650 V4	\$3,479.00	\$10,437.00
95	9	46W0829	16GB TRUDDR4 MEMORY (2RX4, 1.2V) PC4-192	\$349.00	\$3,141.00
96	6	00WG660	300GB 15K 12GBPS SAS 2.5IN G3HS HDD	\$649.00	\$3,894.00
97	3	00KA061	SYSTEM X3550 M5 PCIE RISER 1 (1X LP X16	\$89.00	\$267.00
98	3	42D0510	QLOGIC 8GB FC DUAL-PORT HBA	\$1,849.00	\$5,547.00
99	3	00MV368	SYSTEM X3550 M5 FRONT IO CAGE ADVANCED	\$115.00	\$345.00
100	3	00AM067	9.5MM ULTRA-SLIM SATA MULTI-BURNER	\$129.00	\$387.00
101	3	00KA098	SYSTEM X 900W HIGH EFFICIENCY PLATINUM A	\$399.00	\$1,197.00
102	3	00KA607	SYSTEM X ENTERPRISE 1U CABLE MANAGEMENT	\$39.00	\$117.00
103	3	01GX366	3YR TECH INSTALL PARTS 24X7X4	\$640.00	\$1,920.00
104	3	P177/R1	INTEGRATION - TIPS# 614971	\$180.00	\$540.00
Subtotal					\$27,792.00



Strategy | Technology | Results



Considerations:

- Backups occur locally at each site, and are available locally, if WAN links are offline.
- Replication provides best DR capability with Spectrum Protect.
- Spectrum Protect offers new pool deduplication and compression.
- Replication can go two-way, if desired (from Clarksburg to the Data Center, for example)

Backup Solution Design – WV Tax					
DRAWN	Jeremy Brovage	SIZE	FSCM NO	DWG NO	REV
ISSUED		SCALE	1 : 1	SHEET	1 OF 2

Software with 3 Years 7x24x4 Support

Line No.	Qty	Part Number	Description	Unit List	Ext List
105	43	D1IQ6LL	IBM Spectrum Protect Suite Entry - Front End Terabyte (1-100) License + Subscription & Support 12 Months	\$2,524.80	\$108,566.40
106	43	E0LVDLL	IBM Spectrum Protect Suite Entry - Front End Terabyte (1-100) Annual SW Subscription & Support Renewal	\$520.11	\$22,364.73
107	43	E0LVDLL	IBM Spectrum Protect Suite Entry - Front End Terabyte (1-100) Annual SW Subscription & Support Renewal	\$535.72	\$23,035.96
Subtotal					\$153,967.09
 Hardware & Software Subtotal					\$591,031.09
IBM Custom Technical (CTS) Support - One Hour Critical Support					\$53,759.16
Subtotal					\$644,790.25
Discount					\$334,790.09
Subtotal					\$310,000.00
On-site Training per Specifications					\$15,000.00
Total					\$325,000.00

VENDOR NAME: Software Information Systems, LLC FEIN: 61-1371685

PHONE NUMBER: 304 768-1645

VENDOR SIGNATURE



Charles D. Arnett

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: _____

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Software Information Systems LLC
Company


Authorized Signature

6-2-2016
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

REQUEST FOR QUOTATION
Backup Hardware/ Software System RFQ

and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address and customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: Charles Arnett

Telephone Number: 304 768-1645

Fax Number: 304 768-1671

Email Address: carnett@thinksis.com

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

Charles D Arnett Sr. Chief Executive
(Name, Title)

(Printed Name and Title)

200 Association Drive, Charlotte NC 28311
(Address)

304 769-1645 304-769-1671
(Phone Number) / (Fax Number)

~~ca~~ carnett@thinksis.com
(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Software Informatics Systems LLC
(Company)

CD Arnett Sr. Chief Executive
(Authorized Signature) (Representative Name, Title)

Charles D. Arnett Sr. Chief Executive
(Printed Name and Title of Authorized Representative)

6-2-2016
(Date)

304 769-1645 304 769-1671
(Phone Number) (Fax Number)

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Software Information Systems LLC
Authorized Signature: [Signature] Date: 6-1-2016

State of West Virginia

County of Kanawha, to-wit:

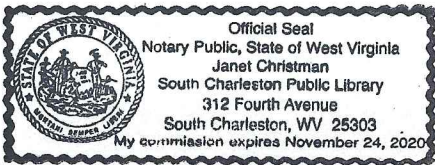
Taken, subscribed, and sworn to before me this 1 day of June, 2016.

My Commission expires NOV, 2020

AFFIX SEAL HERE

NOTARY PUBLIC

[Signature: Janet Christman]
Purchasing Affidavit (Revised 08/01/2015)



Lenovo System x3650 M5

World-class performance and industry-leading reliability



Power Forward

With the powerful, versatile 2U two-socket System x3650 M5 rack server, you can run even more enterprise workloads, 24/7, and gain faster business insights. Integrated with up to two Intel® Xeon® processors E5-2600 v4 series (up to 44 cores per system), fast TruDDR4 2400MHz Memory, and massive storage capacity, the x3650 M5 fast forwards your business. You can select from an impressive array of storage configurations (up to 28 drive bays) that optimize diverse workloads from Cloud to Big Data.

Maximize Uptime

Lenovo servers have consistently achieved the highest reliability of all x86 servers in the industry. Predictive Failure Analysis and the next-generation diagnostic panel facilitate easy serviceability and reduced downtime and costs. Other high availability features on the x3650 M5 include dual fan zones with redundant fans, and hot-swappable drives and power supplies.

Lenovo Trusted Platform Assurance, a built-in set of security features and practices, protects the hardware and firmware. Also deploy self-encrypting drives using IBM Security Key Lifecycle Manager.

Simplify Provisioning and Management

Centrally automate discovery, inventory tracking, real-time monitoring, configuration, fault detection, alert handling, and OS/hypervisor installation over the lifecycle of your servers with [Lenovo XClarity](#), a best-in-class enterprise management tool. A mobile option enables you to securely manage your systems from Android and iOS devices.

Reduce Energy Costs

Energy-saving features such as dual fan zones and extended operating temperature ranges maintain advanced cooling. 80 PLUS® Titanium power supplies deliver up to 96 percent efficiency. With memory speeds up to 2400MHz and support for up to eight NVMe PCIe SSDs, the x3650 M5 lets your workloads fly.

Why Lenovo

Lenovo is the leading provider of x86 systems for the data center. The portfolio includes rack, tower, blade, dense and converged systems, and supports enterprise class performance, reliability and security. Lenovo also offers a full range of networking, storage, software and solutions, and comprehensive services supporting business needs throughout the IT lifecycle.

Lenovo™



Lenovo System x3650 M5

Specifications

Form Factor/Height	2U Rack
Processor (max)/Cache (max)	Up to two 22-core Intel® Xeon® processors E5-2600 v4 series /Up to 55MB per processor
Memory (max)	Up to 1.5TB – 2400 MHz – with 64GB TruDDR4 Memory LRDIMMs; system supports RDIMM/LRDIMM
Disk Bays	Up to 24 front and 4 rear 2.5-inch HDDs/SSDs; or up to 12 3.5-inch and 2 rear 3.5-inch HDDs + 2 2.5-inch HDDs/SSDs; or up to 8 3.5-inch HDDs and 2 rear 3.5-inch or 2.5-inch HDDs/SSDs; up to 8 2.5-inch NVMe PCIe SSDs on 2.5-inch configurations
Maximum Internal Storage	Up to 120TB
RAID Support	12Gbps dedicated slot for the first RAID; support for up to four RAID adapters
Power Supply (std/max)	1/2 redundant 550W AC, 750W AC, 900W AC, 1500W AC, 900W DC 80 PLUS® Platinum, or 750W, 1300W AC 80 PLUS Titanium
Hot-Swap Components	Power supplies, fan modules and HDDs/SSDs
Network Interface	4 x 1GbE (std.) and 1 x IMM; optional 10/40GbE ML2 or PCIe adapter; Trusted Platform Module built-in
Expansion Slots	1 – 8 PCIe 3.0 slots (supports up to 4 GPUs and up to 1 x ML2) and 1 dedicated RAID slot
USB Ports/VGA Ports	Up to 3 x USB 2.0 front, 2 x USB 3.0 rear, 1 x USB 2.0 internal for hypervisor/1 front (optional) and 1 back
Energy-Efficiency	ENERGY STAR® compliance (model dependent); up to 40°C operating temp; 2 fan zones with up to 6 fans
Systems Management	Lenovo XClarity Administrator with mobile option; Lenovo XClarity Pro software bundle; Lenovo XClarity Energy Manager; IMM2.1
Operating Systems (OS) Supported	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware vSphere - (Optional USB Key or SD Media Adapter)
Limited Warranty	3-year customer replaceable unit and onsite limited warranty, next business day 9x5; upgrades available

Options

<p>64GB TruDDR4 Memory (4Rx4, 1.2V) PC4-19200 CL17 2400MHz LP LRDIMM</p> <p>46W0841</p> <p>Add up to 1.5TB TruDDR4 Memory to accelerate performance</p>	<p>SD Media Adapter with RAIDED VMware ESXi</p> <p>00FP644</p> <p>Pre-loaded SD Media Adapter card for bootable hypervisor</p>	<p>3.84TB 6Gb SAS Enterprise Capacity G3HS MLC SSD</p> <p>00NA671</p> <p>Enterprise capacity solid state drives for read-intensive applications</p>
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For More Information

To learn more about the x3650 M5, contact your Lenovo representative or Business Partner or visit lenovo.com/systems/servers

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lenovo.com/systems/storage

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Highlights

- Customize your storage system with flexible software and hardware options
 - Boost performance with next-generation IBM® Storwize® V5000
 - Store up to five times more data on your existing storage with IBM compression technology¹
 - Consolidate and provide Storwize V5000 capabilities to existing storage infrastructures using optional external virtualization
 - Implement configurations for high availability and data mobility
 - Simplify management with an industry-leading graphical user interface
-

IBM Storwize V5000

Designed to drive innovation and greater flexibility with a hybrid storage solution

The enterprise data storage marketplace is changing at a rapid pace. Organizations of all sizes are experiencing new business and IT operational challenges. Businesses now need greater data collaboration, agility and cost efficiency to stay ahead of the competition. Today, data is more important than ever for making highly informed decisions in real time. Security teams need data to recognize and prevent fraud before it happens. Call centers need data to help accelerate customer service. Most important, top executives need data to develop strategic insights for battling the competition.

With the rise of new applications that demand the integration of big-data analytics, mobility and social platforms, organizations require additional storage capacity, performance, advanced functionality and flexibility. IT must deliver more services faster and more efficiently, enable real-time insight and support more customer interaction. The right infrastructure allows clients to share information, secure transactions and drive real-time insights.

To enter the new era of business, organizations need robust storage solutions such as IBM Storwize V5000 to provide a comprehensive set of tools that enable unified virtualization, extraordinary scale and simplified management—all designed to support key business initiatives. Three new Storwize V5000 models—IBM Storwize V5030, IBM Storwize V5020 and IBM Storwize V5010—provide the flexibility to start small and keep growing while leveraging existing storage investments.



Utilizing IBM Spectrum Virtualize™ software at its core, Storwize V5000 is a hybrid storage solution that provides improved performance, virtualization capabilities and greater flexibility. It includes built-in functions such as IBM Real-time Compression™ and IBM Easy Tier® technology to deliver extraordinary levels of efficiency and high performance. Storwize solutions achieve up to 5:1 data compression ratios, require 47 percent less storage administration, and can provide up to three times more performance with only five percent flash storage.¹ Available in three new models, Storwize V5000 delivers enterprise capabilities at entry-level pricing to help handle business-critical applications while controlling costs for growing organizations.

Multiply your possibilities. New Storwize V5000 models provide the flexibility to start small and keep growing, while leveraging existing storage investments.

IBM Storwize also helps organizations achieve better data economics to support the traditional and new mobile, social and analytics workloads that are critical for success. The shift to cloud computing requires a fundamental shift in how organizations consume and support IT.

Storwize V5000 is intended to deliver more of what you need from storage with greater flexibility—while using fewer resources. Using innovative IBM technology, a single Storwize V5000 system can scale up to 504 drives per system (and up to 1,008 drives with two-way clustered systems), or can store up to 2 PB per system (and 4 PB with two-way clustered systems).



Encompassing Storwize family functions

Storwize V5000 leverages proven Storwize family functions, management and interoperability features.

Virtualize external storage

Built with IBM Spectrum Virtualize software, Storwize V5000 enables applications to run without disruption, even when changes are made to the storage infrastructure.

Available in the larger model, Storwize V5030 also extends data virtualization to other storage systems. When virtualized, data in a storage system becomes part of the Storwize solution, and it can be managed in the same way as internal drives. Data in external systems inherits all the Storwize functional richness and ease-of-use features, including advanced replication, high-performance thin provisioning, encryption, Real-time Compression and Easy Tier.

Virtualizing external storage helps improve administrator productivity and boosts storage utilization while also enhancing and extending the value of existing storage investments.

IBM Spectrum Virtualize software in the three Storwize V5000 models provides advanced storage functions that enable VMware vSphere Virtual Volumes (VVOL) and support the latest capabilities in key operating environments including Microsoft ODX and VMware vSphere v6.

Transform the economics of data with Real-time Compression

Real-time Compression in Storwize V5030 is designed to enable storing up to five times as much data in the same physical disk space by compressing data as much as 80 percent.² Unlike other approaches to compression, Real-time Compression is designed to be used with active primary data such as production databases and email systems, which dramatically expands the range of candidate data that can benefit from compression. Real-time Compression operates immediately as data is written to disk, meaning that no space is wasted storing uncompressed data awaiting post-processing. When combined with external data virtualization, Real-time Compression can significantly enhance the usable capacity of existing storage systems, extending their useful life even further.

Enhance storage access with Easy Tier

Easy Tier provides automatic migration of frequently accessed data to high-performing flash storage, enhancing usage efficiencies. Operating at a fine-grained granularity, the optional Easy Tier function automatically repositions different data types to the appropriate class of drives based on input/output (I/O) patterns and drive characteristics, requiring no administrative interaction. Using Easy Tier, you can increase performance up to three times using only five percent flash storage.²

Protect your most valuable asset—your data

To help protect sensitive data from unauthorized users, Storwize V5030 and Storwize V5020 give IT teams the full power of storage encryption. In addition to placing encryption inside hardware arrays—which protects only against a subset of data security risks—IBM Spectrum Virtualize software includes encryption capabilities in its management layer. This enables organizations to add encryption across their existing heterogeneous storage arrays, while leveraging a single point of control for encryption throughout the storage layer.

Storwize V5000 offers an optional IBM FlashCopy® function designed to create an almost-instant copy of active data, which can be used for backup purposes or for parallel-processing activities.

Should a catastrophic event occur at a data center, Storwize V5000 supports remote mirroring to create copies of data for use at a second location. Metro Mirror supports synchronous replication at distances up to 300 km (186 miles), whereas Global Mirror supports asynchronous replication at distances up to 8,000 km (4,970 miles). Replication can occur between any Storwize family offerings, and can include any supported virtualized storage. With IP networking, Storwize V5000 supports 1 GbE and 10 GbE connections, and uses innovative Bridgeworks SANrockIT technology to optimize the use of network bandwidth. As a result, the networking infrastructure may require lower speeds (and thus, lower costs), or users may be able to improve the accuracy of remote data through shorter replication cycles.

In addition, the IBM HyperSwap® function enables a single Storwize V5030 system to support servers in two data centers. In this configuration, the solution enables servers at both data centers to access data concurrently. When combined with server data mobility functions such as VMware vMotion or IBM PowerVM® Live Partition Mobility, this configuration enables nondisruptive storage and virtual machine mobility between the two data centers.

Storwize V5000 also helps improve data availability with its support for Distributed RAID. The system allows data to be distributed across a large number of physical drives that are used simultaneously, achieving faster rebuild time. What's more, Distributed RAID can also deliver increased performance since data can be read from/written to more drives for a given I/O.

Avoid disruptions with dynamic migration

Moving data is one of the most common causes of planned downtime. Storwize V5000 includes a dynamic data migration function that is designed to move data from existing storage into a new system or between arrays in a Storwize V5000 system, while maintaining user access to data. The data migration function might be used, for example, when replacing older storage with newer storage, as part of load-balancing work or when moving data in a tiered storage infrastructure.

Nondisruptive migration can speed time-to-value from weeks or months to days, minimize downtime for migration, eliminate the cost of add-on migration tools, and may help avoid penalties and additional maintenance charges for lease extensions. The result can be real cost savings to your business.

Take advantage of additional features

In addition, Storwize V5000 includes:

- Innovative management capabilities, to ease storage management
- Dual clustering for Storwize V5030, to enable growth from smaller configurations
- Support for OpenStack Cinder driver, which helps automate storage provisioning and volume management for organizations by combining the efficiency of Storwize V5000 with the OpenStack compute cloud platform

Leveraging proven independent software vendor solutions

IBM is committed to continuous improvement and smooth application integration to optimize business results and minimize time-to-value. Our commitment is evident through our ongoing work and enduring partnerships with independent software vendors (ISVs) such as Microsoft, Oracle, SAP, Symantec and VMware.

IBM Storwize V5000 at a glance

Software	IBM Spectrum Virtualize software for Storwize V5030	IBM Spectrum Virtualize software for Storwize V5020	IBM Spectrum Virtualize software for Storwize V5010
User interface	Web-based graphical user interface (GUI)	Web-based GUI	Web-based GUI
Single or dual controller	Dual	Dual	Dual
Connectivity (standard)	10 Gb iSCSI 1 Gb iSCSI	12 Gb SAS 1 Gb iSCSI	1 Gb iSCSI
Connectivity (optional)	16 Gb Fibre Channel 12 Gb SAS 10 Gb iSCSI / Fibre Channel over Ethernet (FCoE) 1 Gb iSCSI	16 Gb Fibre Channel 12 Gb SAS 10 Gb iSCSI / FCoE 1 Gb iSCSI	16 Gb Fibre Channel 12 Gb SAS 10 Gb iSCSI / FCoE 1 Gb iSCSI
Cache (per system)	32 GB or 64 GB	16 GB or 32 GB	16 GB

IBM Storwize V5000 at a glance

<p>Drives supported</p>	<p>Small form-factor 2.5-inch disk drives:</p> <ul style="list-style-type: none"> • 300 GB, 600 GB @ 15k rpm • 900 GB, 1.2 TB, 1.8 TB @ 10k rpm • 1 TB,* 2 TB @ 7.2k rpm SAS nearline <p>Large form-factor 3.5-inch disk drives:</p> <ul style="list-style-type: none"> • 300 GB, 600 GB @ 15k rpm, SAS (2.5-inch drive in a 3.5-inch drive carrier) • 900 GB, 1.2 TB, 1.8 TB @ 10k rpm, SAS (2.5-inch drive in a 3.5-inch drive carrier) • 2 TB,* 3 TB,* 4 TB, 6 TB, 8 TB @ 7.2k rpm <p>Solid-state drive (SSD) 2.5-inch drives:</p> <ul style="list-style-type: none"> • 200 GB,* 400 GB, 800 GB, 1.6 TB, 3.2 TB • 1.92 TB Read Intensive flash drives 	<p>Small form-factor 2.5-inch disk drives:</p> <ul style="list-style-type: none"> • 300 GB, 600 GB @ 15k rpm • 900 GB, 1.2 TB, 1.8 TB @ 10k rpm • 1 TB,* 2 TB @ 7.2k rpm SAS nearline <p>Large form-factor 3.5-inch disk drives:</p> <ul style="list-style-type: none"> • 300 GB, 600 GB @ 15k rpm, SAS (2.5-inch drive in a 3.5-inch drive carrier) • 900 GB, 1.2 TB, 1.8 TB @ 10k rpm, SAS (2.5-inch drive in a 3.5-inch drive carrier) • 2 TB,* 3 TB,* 4 TB, 6 TB, 8 TB @ 7.2k rpm <p>SSD 2.5-inch drives:</p> <ul style="list-style-type: none"> • 200 GB,* 400 GB, 800 GB, 1.6 TB, 3.2 TB • 1.92 TB Read Intensive flash drives 	<p>Small form-factor 2.5-inch disk drives:</p> <ul style="list-style-type: none"> • 300 GB, 600 GB @ 15k rpm • 900 GB, 1.2 TB, 1.8 TB @ 10k rpm • 1 TB,* 2 TB @ 7.2k rpm SAS nearline <p>Large form-factor 3.5-inch disk drives:</p> <ul style="list-style-type: none"> • 300 GB, 600 GB @ 15k rpm, SAS (2.5-inch drive in a 3.5-inch drive carrier) • 900 GB, 1.2 TB, 1.8 TB @ 10k rpm, SAS (2.5-inch drive in a 3.5-inch drive carrier) • 2 TB,* 3 TB,* 4 TB, 6 TB, 8 TB @ 7.2k rpm <p>SSD 2.5-inch drives:</p> <ul style="list-style-type: none"> • 200 GB,* 400 GB, 800 GB, 1.6 TB, 3.2 TB • 1.92 TB Read Intensive flash drives
<p>Maximum drives supported</p>	<p>Maximum of 504 drives per system with 20 expansion enclosures and 1,008 drives in two-way clustered:</p> <ul style="list-style-type: none"> • Small form-factor enclosure: 24 x 2.5-inch drives • Large form-factor enclosure: 12 x 3.5-inch drives 	<p>Maximum of 264 drives per system with 10 expansion enclosures:</p> <ul style="list-style-type: none"> • Small form-factor enclosure: 24 x 2.5-inch drives • Large form-factor enclosure: 12 x 3.5-inch drives 	<p>Maximum of 264 drives per system with 10 expansion enclosures:</p> <ul style="list-style-type: none"> • Small form-factor enclosure: 24 x 2.5-inch drives • Large form-factor enclosure: 12 x 3.5-inch drives



Take the next step. [Click here.](#)
 See the full list of specifications.

Why IBM?

The Storwize family of products from IBM, a recognized leader in the storage industry, is known for providing efficiency and high-performance storage for almost any type of workload. IBM storage offerings customized for small, mid-sized and large organizations are designed to deliver performance in stream-lined packages that are easy to buy, deploy and manage.

Offered in a wide range of storage systems, the Storwize family delivers sophisticated capabilities that help control costs for growing businesses.

For more information

To learn more about IBM Storwize V5000, please contact your IBM representative or IBM Business Partner, or visit: ibm.com/storage/storwizev5000

IBM Global Financing can help enable credit-qualified clients to transform their business with affordable options to acquire the latest IT solutions, visit: ibm.com/financing



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IBM Systems
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Produced in the United States of America
May 2016

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Actual available storage capacity may be reported for both uncompressed and compressed data and will vary and may be less than stated.

* Available only in Storwize V5000 generation 1.

¹ IBM lab measurements – April 2012.

² IBM lab measurements – August 2010.



Please Recycle





Highlights

- Optimize data protection for virtual servers, core applications, software-defined storage and big data
 - Be confident your data is protected
 - Reduce data protection costs by up to 53 percent¹ with high-performance, built-in efficiency features
 - Choose the right mix of storage to optimize backups, including disk, cloud, tape and object storage
 - Choose from a wide range of capacity-based licensing plans
-

IBM Spectrum Protect Suite

IBM Tivoli Storage Manager Suite for Unified Recovery

Data protection and recovery is more challenging than ever, often involving solutions from multiple vendors to meet the requirements of today's heterogeneous environments. However, a proliferation of data protection products can increase complexity, leading to higher total costs and less confidence in the ability to recover your data every time.

By taking a more comprehensive approach to protecting data, IBM® Spectrum Protect™ Suite (formerly IBM Tivoli® Storage Manager Suite for Unified Recovery) helps reduce complexity and backup infrastructure costs by up to 53 percent.¹ The solution can also help increase application availability, leading to improved IT service levels.

IBM Spectrum Protect Suite is a comprehensive data protection solution that includes backup servers (IBM Spectrum Protect Extended Edition), snapshot management, and advanced backup agents for virtual machines and core applications.

IBM Spectrum Protect Suite scales to meet the needs of small to very large environments, managing billions of data objects per backup server. It also supports a multitude of connections, including cloud, wide area networks (WANs), local area networks (LANs) and storage area networks (SANs). With flexible licensing plans, organizations can choose the right option for their specific needs.



IBM Spectrum Protect Suite helps you to confidently answer this important question: “In a data disaster emergency, where downtime may be impacting the business, are you confident that the right person, with the right training and authorization, will access the right system to restore the right data, to the right place, without breaking anything else, in a timely manner?”

Optimize data protection for virtual machines

IBM Spectrum Protect Suite includes advanced support for VMware and Microsoft Hyper-V data protection and recovery. Organizations can deploy IBM Spectrum Protect for Virtual Environments and IBM Spectrum Protect Snapshot, as needed, for additional backup and recovery capabilities and improved performance. VMware administrators can manage snapshots and advanced backup agents for VMware together, using IBM integration with the VMware vSphere Client. A self-service restore portal for VMware simplifies data recovery.

IBM Spectrum Protect Suite can reduce complexity by offering a single platform for managing backups for both virtual and physical machines. The solution provides data protection visibility, control and automation that can benefit the entire IT organization.

Optimize data protection for core applications

IBM Spectrum Protect Suite provides advanced data protection and recovery capabilities with a choice of snapshots and advanced backup agents.

IBM Spectrum Protect Snapshot enables application-aware, virtual machine-aware, hardware-assisted snapshot backup and recovery management for most major IBM and non-IBM storage systems.

Advanced backup agents are available for core applications, including email, database and enterprise resource planning (ERP) applications. The solution helps simplify online backups, multi-threaded restores and routine administration. Application support includes:

Application	Snapshot	Backup agent
Microsoft Exchange	•	•
Microsoft SQL Server	•	•
SAP	•	•
SAP HANA		•
Oracle	•	•
IBM Domino®		•
IBM DB2®	•	•
IBM DB2 pureScale®	•	•
IBM Informix®		•
Custom applications	•	

Snapshots and advanced backup agents for core applications can reduce the disruption of backups and help improve recovery performance, particularly for large applications. Snapshot and backup agents for other applications are available, sold separately.

Optimize data protection for big data

IBM Spectrum Protect Suite also delivers proven, highly scalable data protection for files and objects, often referred to as “big data.” Capabilities include:

- **Incremental “forever” technology**—Eliminates the need to run periodic full backups, and can cost significantly less to operate than solutions that use only snapshots and replication. Incremental file and object backups are supported on virtual and physical environments.
- **Snapshots**—Provides near-instant backup, recovery and cloning capabilities
- **Hierarchical space management**—Enables policy-based migration of inactive file and object data to lower-cost storage, without changing the way users or applications access their data.
- **File system integration**—Supports IBM Spectrum Scale™, IBM Elastic Storage™, journal file systems and network data-management protocol (NDMP) to help improve backup performance for large-capacity file and object environments.

Advantages of IBM data protection for virtual machines

Feature	Benefits	VMware	Hyper-V
Auto-discovery of new virtual machines	Helps ensure that all data in the virtualized environment is protected	•	•
Self-service restore portal	Enables data, server and application owners to easily recover their data	•	
Item-level recovery	Enables fast recovery of individual files, Microsoft Exchange mailboxes and emails, and Microsoft SQL Server databases	•	•
Application-consistent backup and recovery	Helps ensure complete application-consistent backups and simplified restore processes	•	•
Copy management	Enables a single virtual-machine snapshot to be used for data recovery, testing, development, disaster-recovery assurance, analytics, etc.	•	•
Integration with hardware snapshots*	Enables frequent snapshots with minimal impact on application performance	•	
Incremental “forever” backups	Reduces the need for extra capacity and staff time to manage periodic full backups	•	•
Data deduplication	Enables high-performance space reduction, available at the virtual machine, backup server or (optional) ProtecTIER level	•	•
Nondisruptive, single-pass backups	Help increase application performance during backups	•	•
Agentless support	Helps simplify deployment and reduce operating expenses	•	•
Tape support	Helps reduce costs for long-term archiving and retention	•	•
Instant access/instant restore	Helps reduce the end-user impact to nearly zero during virtual-machine restores	•	
Single-pass, full data store recovery*	Provides near-instant recovery of an entire data store, including all virtual machines	•	

* IBM Spectrum Storage Snapshot capability

IBM integration with VMware tools and APIs

Feature	Benefits
VMware vSphere web client support	Allows VMware administrators to easily perform data protection and recovery operations, powered by IBM Spectrum Protect, and launched within the familiar vSphere interface
VMware vCenter integration	Enables VMware administrators to easily configure, schedule, and monitor backups and snapshots
VMware vStorage application programming interface (API) support	Helps reduce compute, storage and network overhead

Be confident your data is protected

In most organizations, there is no tolerance for data loss or extended downtime while data is recovered. Organizations need data protection software that delivers reliable results every time, regardless of the recovery request.

IBM Spectrum Protect Suite offers comprehensive data-recovery capabilities, including:

- **At-a-glance data protection status**—Provides easy-to-view status updates within any browser-enabled device, so IT staff can quickly identify systems at risk and take corrective actions.
- **Recovery at the item, volume, machine, virtual machine and site levels**—Enables comprehensive data recovery, all built into one solution.
- **Recovery fail-over**—Restores can automatically fail over to an alternate site, if the recovery server is down.
- **Integrated, multi-site replication**—Supports easy setup and efficient operations, including accelerated recovery from site-wide outages.
- **Integrated disaster recovery**—Helps organizations maintain an up-to-date recovery plan, which simplifies audits and large-scale restores.
- **Optional extensions**—Integrates with additional IBM Spectrum Storage™ and third-party offerings for additional snapshot and backup agents, remote data mirroring, bare machine recovery and recovery simulators.

Reduce data protection costs with built-in efficiency features

For some organizations, data protection costs can remain high because advanced efficiency features are out of reach. Efficiency features didn't perform well as data grew, or required additional hardware appliances. IBM Spectrum Protect Suite is different. Scalable efficiency features are built in, software-defined and ready to use. Examples include:

- **Deduplication**—Enables high-performance deduplication to be performed by backup servers, source machines or any combination; also available with an IBM ProtecTIER® license plan for organizations using IBM hardware-based deduplication.
- **Incremental “forever” technology**—Reduces backup and deduplication workload because less data is sent to the backup server. Together, incremental backups and deduplication can reduce backup space requirements by up to 95 percent.²
- **Advanced visualization**—Helps reduce the skill and time required to manage backups, and can reduce administration errors.
- **IBM Spectrum Protect blueprints and server-automated configuration scripts**—Help reduce backup server deployment time and process steps by up to 50 percent.³
- **Policy-driven remote replication**—Helps significantly reduce storage requirements at primary facilities, while enabling replication to remote sites for long-term data retention.

- **Transparent file and object archiving**—Moves infrequently accessed data to lower cost storage without changing the way users or applications access their data.
- **Choice of backup storage**—Enables backup data to be stored on disk, cloud, tape, deduplication appliance and object storage. Allows you to choose the options that are most advantageous for your business.

Choose from flexible licensing plans

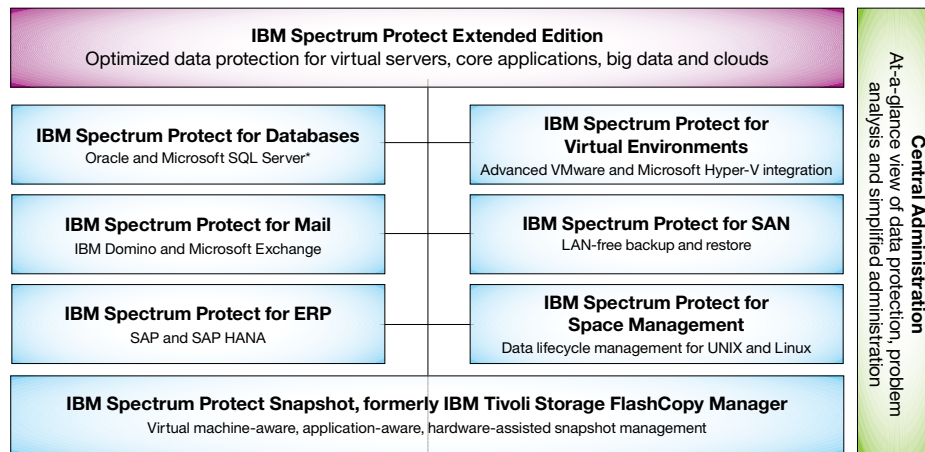
IBM Spectrum Protect Suite offers a choice of capacity-based licensing plans, so organizations can choose the right option for their specific needs. Tiered discounts are built in as capacity increases. Thus, license costs are more predictable and can be much lower than purchasing the components separately.

Capacity pricing also encourages line-of-business managers to use the agents and efficiency features they need, without incurring additional licensing fees. Licensing plans include:

- **Front-end capacity**—Based on the size of the data being protected, making it easy for users to understand and audit chargeback invoices.
- **Back-end capacity**—Based on space used by the backup servers, measured after advanced features like deduplication are used. This plan creates an extra incentive to be efficient.
- **Entry**—Specially priced plans for organizations with less than 100 terabytes of data.

IBM Spectrum Protect Suite licensing plans are also available for archives and ProtecTIER environments.

IBM Spectrum Protect Suite



* IBM DB2 and IBM Informix include IBM Spectrum Protect backup agents.

IBM Spectrum Protect Suite can protect a wide range of systems, including virtual machines, file servers, email, databases, mainframes and even desktops from a single administration interface.

Why IBM?

Data access and availability can either enhance or hamper your business processes. As a trusted supplier of data protection and recovery software for more than 20 years, IBM has helped thousands of organizations improve data access and availability by addressing backup challenges. IBM can help reduce recovery times and get costs under control.

IBM gives you confidence that your data is protected and can be recovered quickly if needed. IBM Research innovations and best practices developed from hands-on field experience combine to deliver unique client value.

For more information

To learn more about IBM Spectrum Protect Suite, please contact your IBM representative or IBM Business Partner, or visit: ibm.com/software/tivoli/products/storage-mgr-unified/



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IBM Systems
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Produced in the United States of America
August 2015

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Actual available storage capacity may be reported for both uncompressed and compressed data and will vary and may be less than stated.

¹ Based on IBM assessments using Butterfly Software.

² Tony Palmer, "IBM Tivoli Storage Manager for Virtual Environments: Robust, Comprehensive Data Protection for Virtualized Environments," *Enterprise Strategy Group*, February 25, 2013. <http://www.esg-global.com/lab-reports/ibm-tivoli-storage-manager-for-virtual-environments/>

³ Based on IBM analysis of IBM Spectrum Protect Blueprint and Server Automated Configuration scripts. Results may vary depending on operating environment.



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